Heat

(1) $SiO_2 + 2H_2O$ \Rightarrow Alkali NaOH $Si(OH)_4$ \Rightarrow $Si(ONa)_4$

(2) $Si(OH)_4 + OH \rightleftharpoons HSiO_3 + 2H_2O$

(3) $2HSiO_3$ \rightleftharpoons $SiO_2 + 2H_2O$

(4) $HSiO_3 + OH$ \rightleftharpoons $SiO_3 + H_2O$

Fig. 1

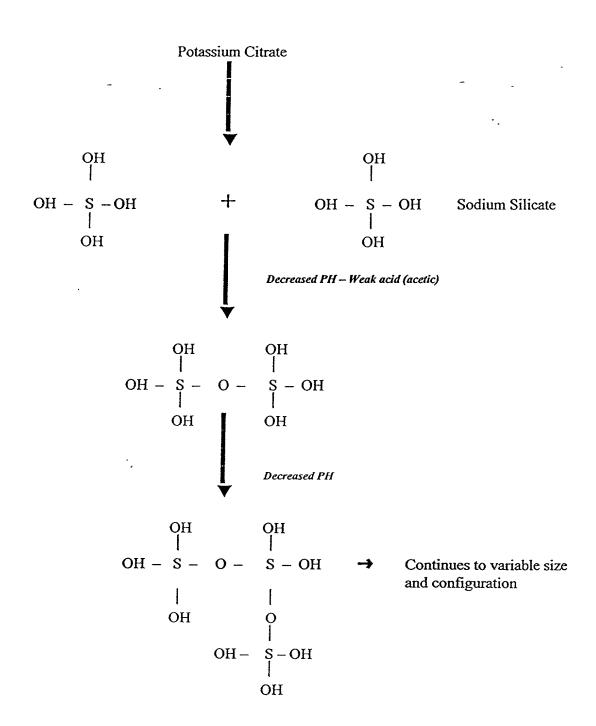


Fig. 2

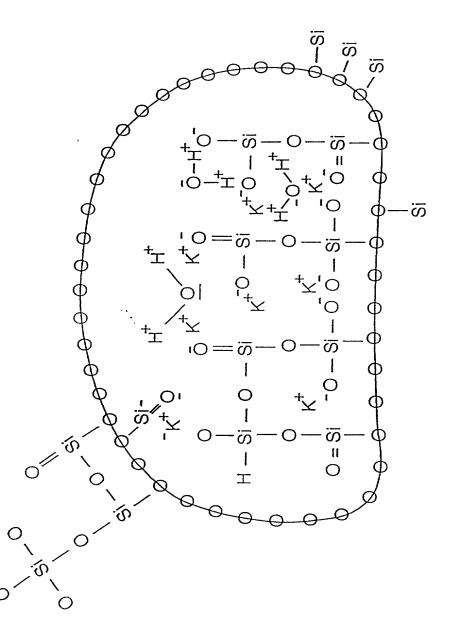


FIG. 3

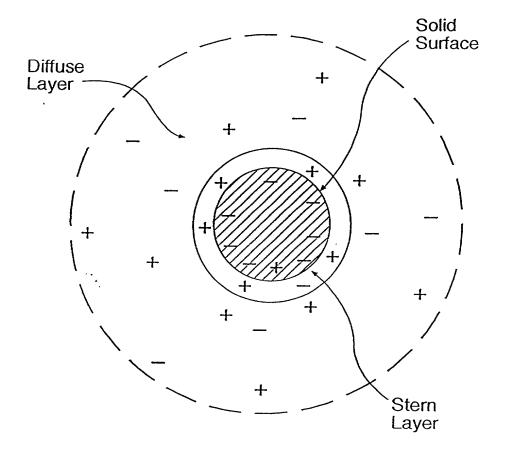


FIG. 4

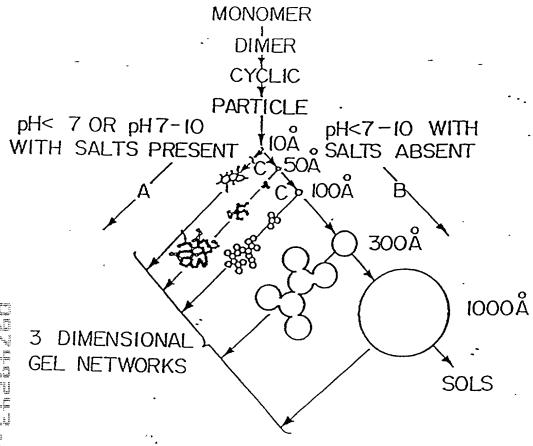


FIG. 5

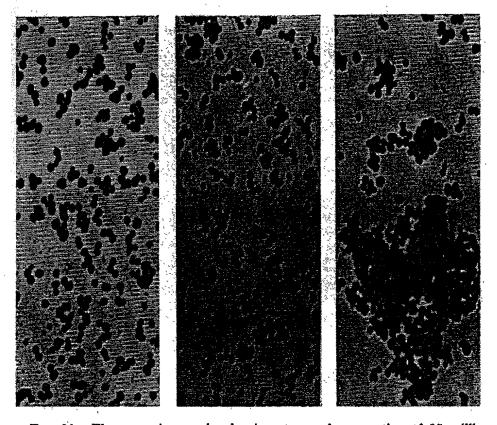
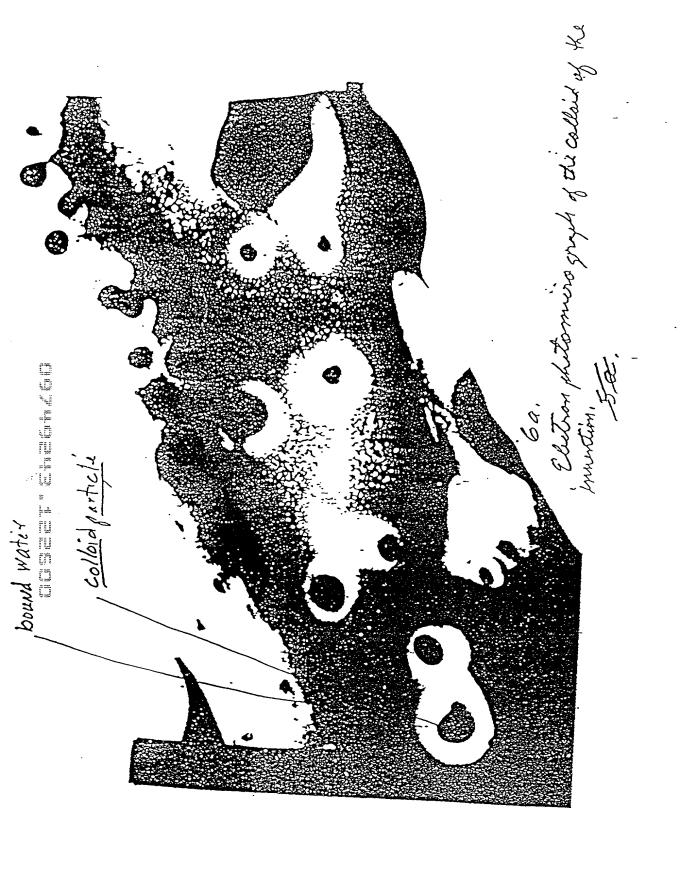
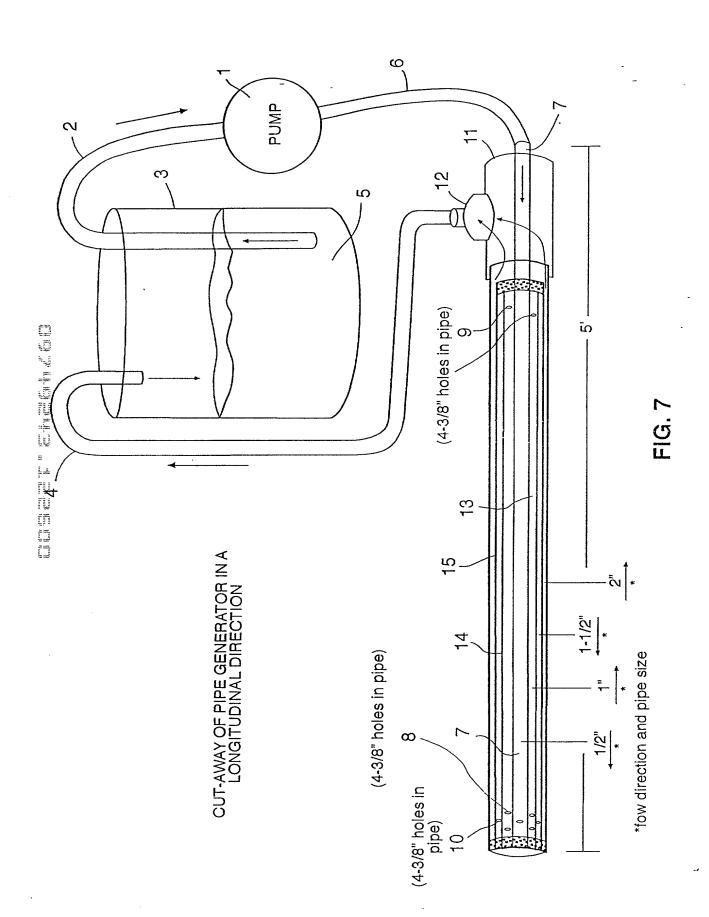
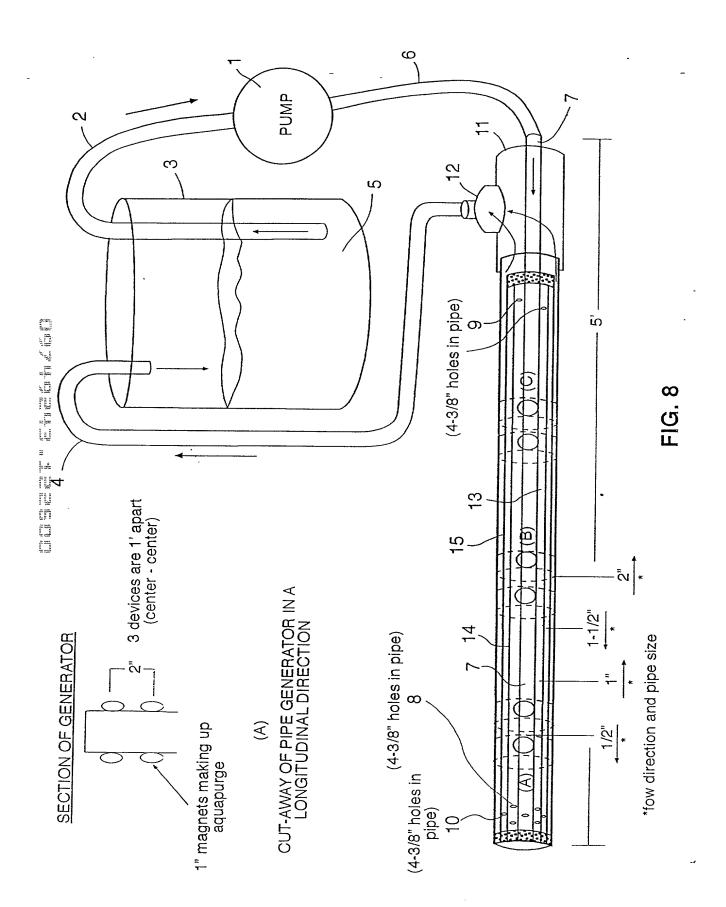


Fig. 26.—Electron micrographs showing stages of aggregation of 35 millimicron silica particles: *left*, colloidal aggregates; *center*, aggregates approaching colloidal size; *right*, supercolloidal aggregates or precipitate.

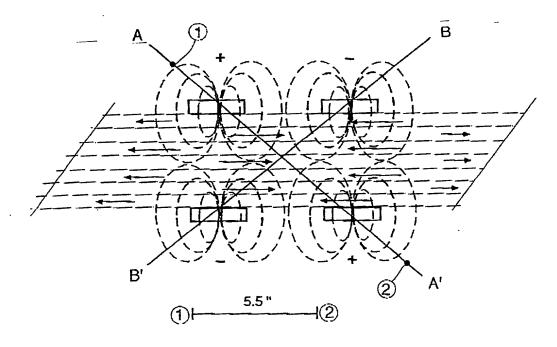
FIG. 6







Cross sectional view of counter current generator of the invention with lines A-A' and B-B' noted for measurement purposes.



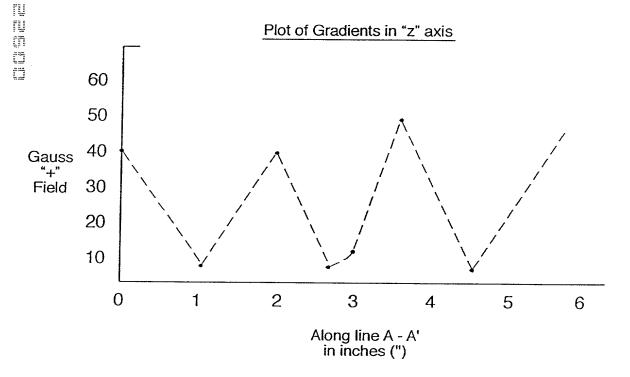


FIG. 9

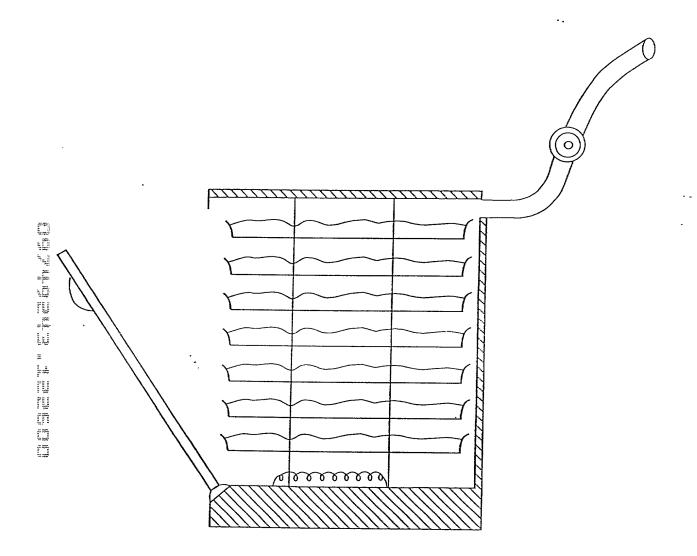


FIG. 10

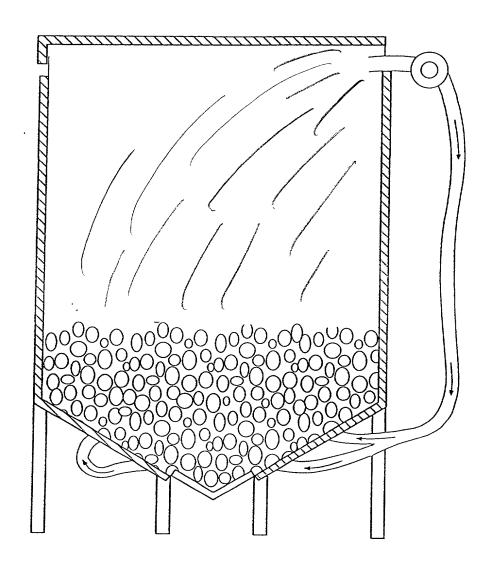


FIG. 11

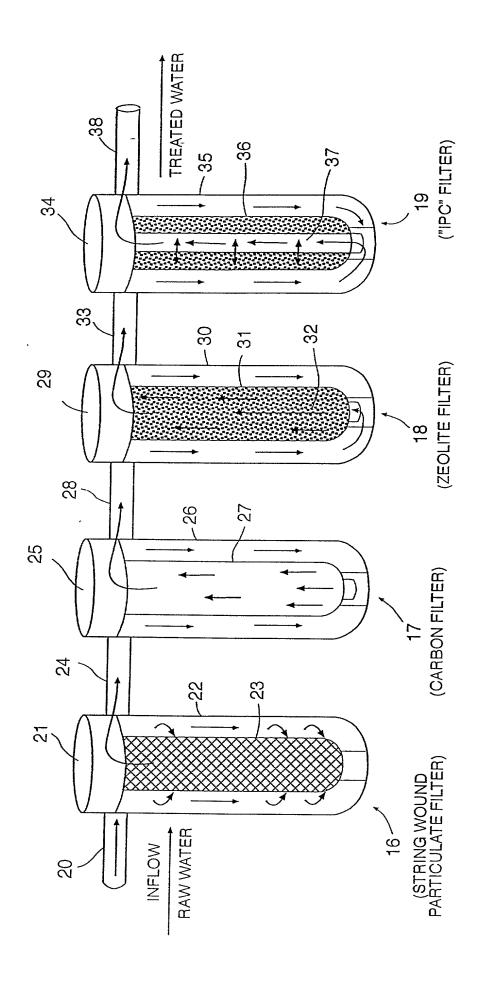


FIG. 12

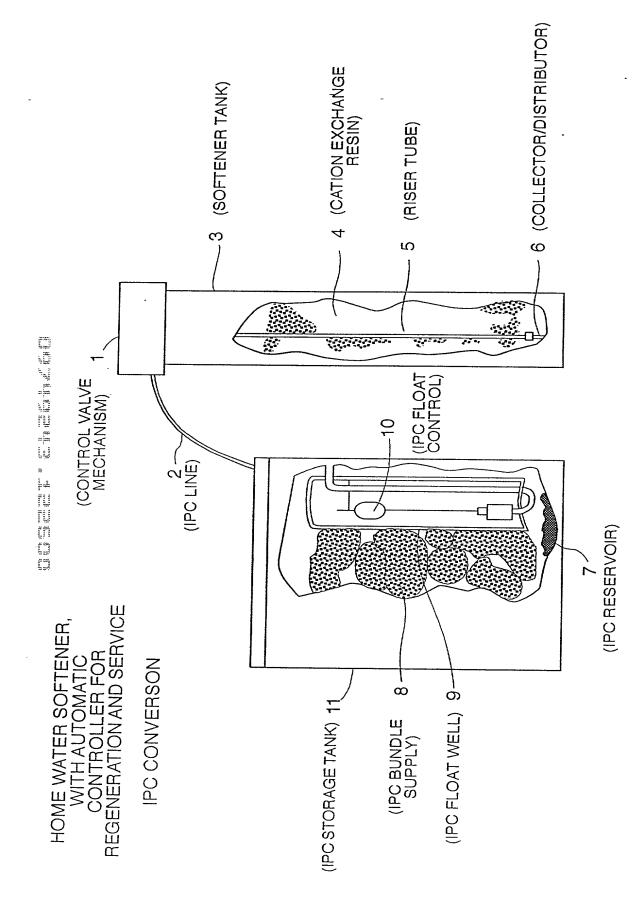


FIG. 14

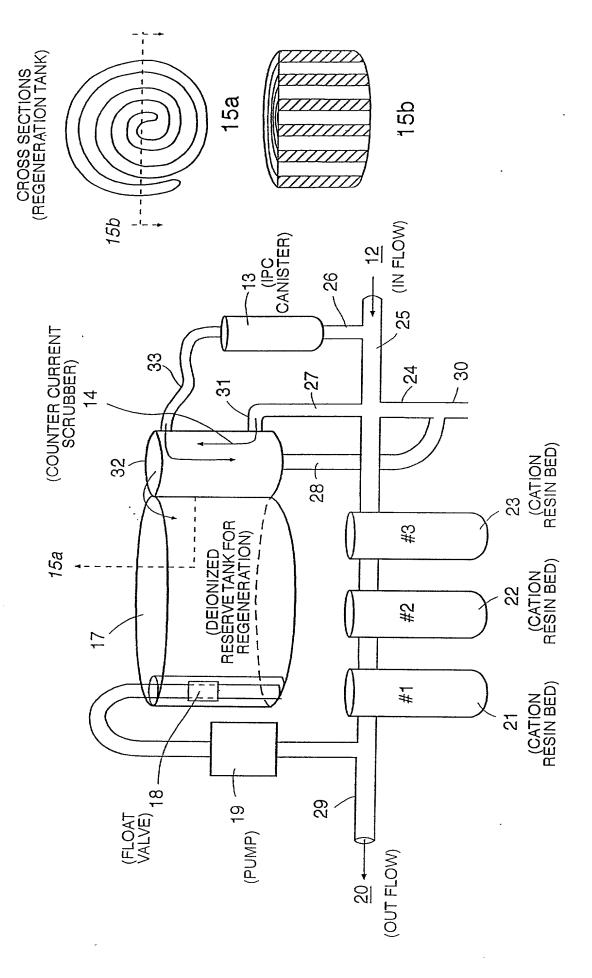


FIG. 15

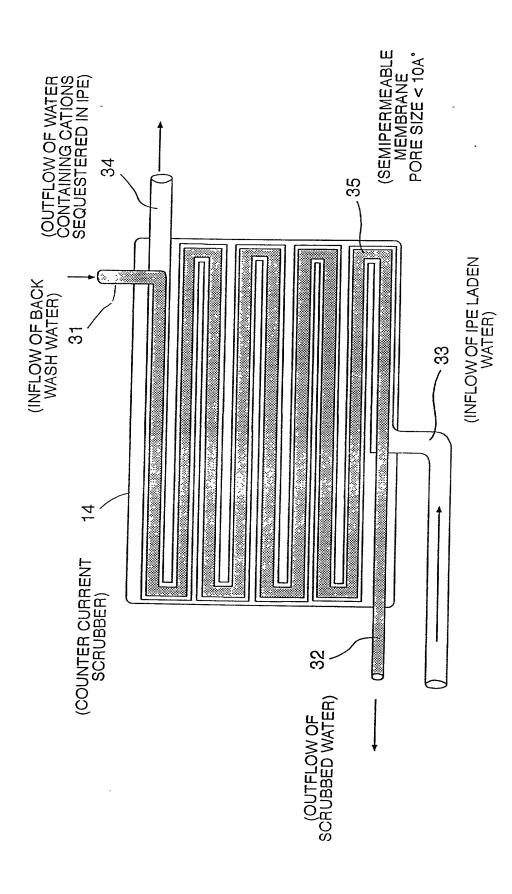


FIG. 16

FIG. 17

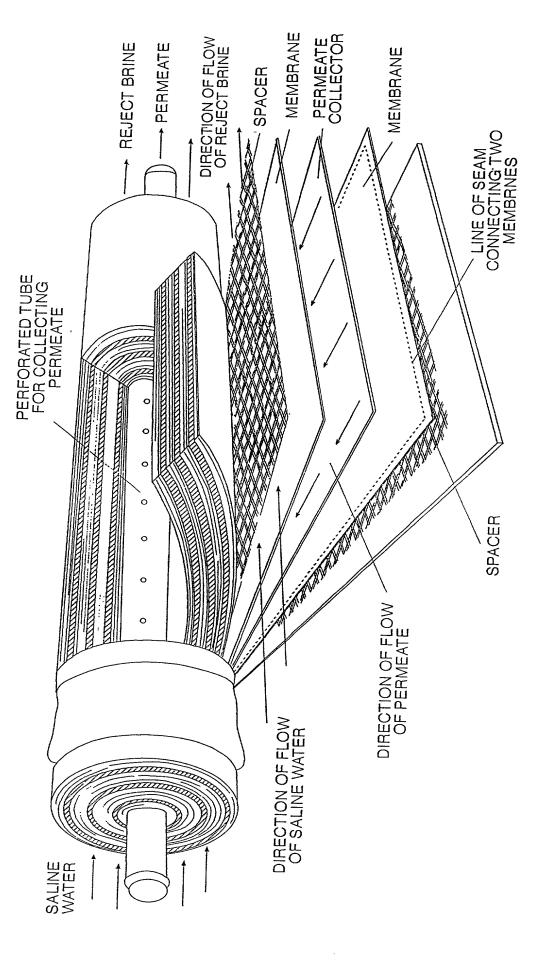


FIG. 18

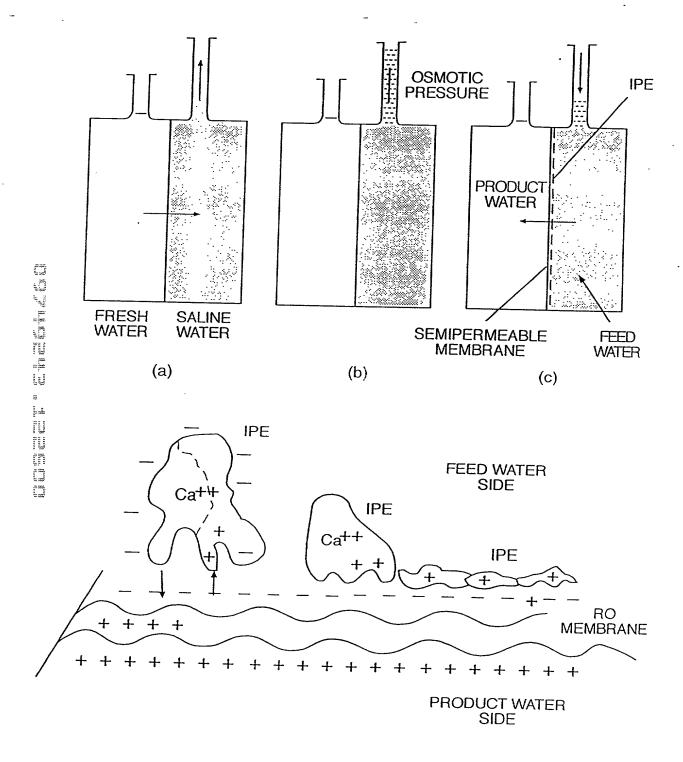


FIG. 19

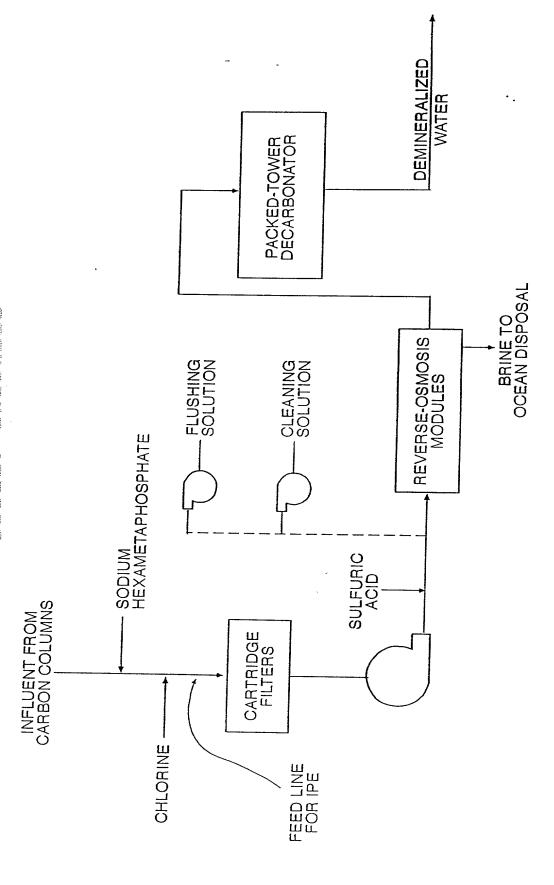


FIG. 20